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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/071,452 | 02/08/2002 | Joseph P. Burke | 010493 | 9954 |
| 23696 | 7590 | 04/09/2004 | EXAMINER | |
| Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714 | | | LE, DANH C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2683 | 8 |

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,452

Applicant(s)

BURKE ET AL.

Examiner

DANH C LE

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>Z</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1-7 are rejected under 35 U.S.C. 102(a) as being anticipated by Juha Ylitalo (WO 02/01732).

As to claim 1, Juha Ylitalo teaches a transmitter for transmitting a signal to a subscriber station through at least two transmit antennas (figure 12, 16, 18 and page 4, line 11-page 5, line 4), the transmitter comprising:

means for transmitting a distinguishable pilot signal through each of the at least two transmit antennas,

means for receiving channel estimate information corresponding to said per-antenna pilot signals',

means for generating channel estimate information, and

means for transmitting a data signal through the at least two transmit antennas based on said pre-correction delays and weights pre-correction delays and weights based on said pre-correct delays and weights (page 46, lines 3-31 and page 47, lines 25-31).

As to claim 2, the claim is a method claim of claim 1; therefore, the claim is interpreted and rejected as set forth in claim 1.

As to claim 3, the claim is a computer claim of claim 1; therefore, the claim is interpreted and rejected as set forth in claim 1.

As to claim 4, Juha Ylitalo inherently teaches a base station apparatus (figure 14, 210) comprising:

at least two transmit antennas (216);

a mixer (figure 11, 12, 14) corresponding to each of said at least two transmit antennas, for applying a per-antenna cover code to a pilot signal to be transmitted through each of said at least two transmit antennas;

receiver (220) for receiving channel estimate information corresponding to said per-antenna pilot signals for at least two transmit paths per transmit antenna;

pre-correction processor (222) for generating pre-correction delays and weights based on said channel estimate information; and

a transmitter corresponding to each of said at least two transmit antennas, for transmitting a data signal through said at least two transmit antennas, wherein the data signal transmitted through each of said at least two transmit antennas is adjusted based on said pre-correction delays and weights (page 46, lines 3-31 and page 47, lines 25-31).

As to claim 5, Juha Ylitalo teaches a receiver (230) for receiving a data signal transmitted from at least two transmit antennas and through at least two transmit paths, the receiver comprising:

means for measuring channel information (238) corresponding to each combination of one of the at least two transmit antennas and one of the at least

two transmit paths; and

means for transmitting (234) said channel information.

As to claim 6, the claim is a method claim of claim 5; therefore, the claim is interpreted and rejected as set forth in claim 5.

As to claim 7, the claim is a computer claim of claim 5; therefore, the claim is interpreted and rejected as set forth in claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Juha Ylitalo in view of Dobrica (US 6,070,086).

As to claim 8, Juha Ylitalo teaches remote station (figure 14, 230) apparatus for receiving signals transmitted from at least two transmit antennas and through at least two transmit paths, the apparatus comprising:

at least channel information (238), wherein channel information measures channel information corresponding to a signal received through a different combination of one of the at least two transmit antennas and one of the at least two transmit paths; and

channel estimate processor (240) for generating channel estimate information based on said measured channel information.

Juha Ylitalo fails to teach at least four channel estimators. Dobrica teaches at least four channel estimators (figure 2, 41-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Dobrica into the system of Juha Ylitalo in order to obtain the carrier reference for detecting and measuring the input signals.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Abeta et al (US 6,647,003) teaches the channel estimator unit, and CDMA receiver and CDMA transceiver with the channel estimator unit.

B. Kitade et al (US 6,522,639) teaches the transmission reception apparatus and transmit the power control.

C. Whinnett (US 5,999,826) teaches the device for transmitter path weight and method therefore.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C LE whose telephone number is 703-306-0542. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Danh C.Le



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